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ABSTRACT

As opposed to being a "closed" text (tightly constrained by physical formats, corporate style, and specialized vocabulary), technical writing is actually "open" in the sense that such a text can be interpreted subjectively by an informed audience. Three ethical issues that should be explored in teaching technical writing include personality--the presence of the author and a discernible "voice": objectivity--the fair treatment of facts and phenomenon: and linguistic manipulation--using language as a tool to create illusion. Based on knowledge of these areas it will be possible to offer writing instruction that gives the technologically minded student a valuable asset--communication skills--as well as a sense of values. (HOD)

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The Writer's Mind: Ethics in the Teaching of Technical Writing[1]

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"If Galileo were a scientist today he wouldn't get funded."
Lou Grant Show
"Ethics in Science"

Unlike any other writing class, technical writing puts the teacher, the student, and the subject matter squarely into the domain of technocracy. As such the course functions as the garden in the machine. This situation presents teachers with both unique opportunities and problems. Since teaching writing is often viewed as somehow tampering with one's basic beliefs, with one's intellect, with one's ego, it is the one instructional area in which essential changes can be made in world-views. In this sense, we are what we write. While teachers often see technical writing as a "closed" text (rightly constrained by physical formats, corporate style, and specialized vocabulary), it is actually "open" in the sense that such a text can be interpreted subjectively by an informed audience. Scientists and technicians do question published findings; in fact, progress--according to Larry Laudan and others--is predicated on such skepticism or uncertainty. For the teacher of technical writing and, indeed, for the writing technocrat/scientist, the single most important issue created by this sense of uncertainty involves ethics in its broadest sense. What does one need to know to capitalize on this issue in the teaching of technical writing.

Basically we need to focus on the linguistic, psychological, and philosophical implications of textual "openness" in technical writing. The works of M.A.K. Halliday and Louise M. Rosenblatt offer us interesting and useful clues to the ways in which texts can be "read" in a variety of non-traditional modes. Lawrence Cranberg, Dallas High, and Juergen Ruesch present arguments for ethics in communication from a psychological standpoint; while the philosophical writings of Michael Polanyi, Maurice Merleau-Ponty, and James Edie suggest some intriguing directions for ethics in language. It should be noted that this list represents only a beginning; it is a prolegomenon to a study. As such it is intended to suggest fruitful directions for further inquiry. The remainder of this essay, I think, will indicate the threads that move in, out, and beyond the central issues such figures as those cited above postulate, and, at the same time, tie these issues and their implications to the teaching of technical writing.

Technocrats must be able to communicate; make decisions; investigate, collect, and apply data; and evaluate on both a horizontal and vertical scale Horizontally engineers must be able to work with other engineers both within and without their specialization. Aircraft corporations, for instance, employ civil, electrical, mechanical, electronic, and a variety of other engineers. While each works on a specific part of an overall project, they must all be able to bridge the gap between their areas--not an easy task according to some critics. Vertically (upwards) they must be able to talk to the scientists and to understand what the scientists are saying. Vertically (downwards) they have to possess the facility to address specific audience levels from informed (non-engineering) supervisory and administrative personnel to the average (multiple-interest) lay audience. The primary element in this engineering function is the production of artifacts, the practical and applicable fruits of science. The

secondary element in this function is communication, and it is precisely this element which prompts our interest as teachers in both ethics and ethical language behaviors.

While it would be possible to explore any number of ethical issues which could be useful in teaching technical writing, I would like to concentrate on three areas which seem to me to be particularly important--personality, the presence of the author, and a discernible "voice"; objectivity, fair treatment of facts and phenomenon; linguistic manipulation, using language as a tool to create illusion. Although these are not actually three distinct areas operationally, I would like to treat them as such at first before discussing their implications for engineering and technical writing.

Personality

"Who am I this time?" Kurt Vonnegut

I deliberately separated personality from objectivity. Personality, it seems to me, implies the presence of the writer as an identity in a work while objectivity rests on an attitude toward material.[2] One can use the phrase, "I found that the sample weighed 128 grams," without destroying the factual nature of the observed measurement. Such a statement not only identifies the author, it also places responsibility and, I suspect, is exactly what makes engineers and others apprehensive about using first person pronouns.

In effect, technical writing maintains two unwritten but implied rules about personality: it is permissible and even desirable to ignore the author's identity, voice, or stance; and the best method for communication is to devalue the individual--as both writer and reader. The consequences of such a position has implications both for communication and ethics. To explore this problem we need to examine the methods writers use to communicate in such a society and the relation of the reader to technical material.

Herbert Simon, for instance, posits an intriguing definition of a goal-seeking system (of which man is an example) that seems to me particularly appropriate to examining this relationship. Such a system, Simon maintains, has two channels (the old inner and outer environment in some ways): the afferent (sensory channels) which receives information and the efferent (motor channels) through which the environment is manipulated.[3] Interestingly, Simon's observations parallel the work of Louise Rosenblatt who uses the term efferent in her theoretical discussions to describe the concepts to be retained after reading. While this use at first appears to be somewhat at odds with Simon's use of the term, I want to suggest that his efferent channel depicts ways of using the concepts retained by the afferent channel and, as such, both terms describe the same phenomenon as Rosenblatt's term. Rosenblatt, in fact, says that readers direct their response to referential prose outward [afferently in Simon's terms] toward concepts to be retained or actions which are textually determined.[4] Humans, by their very nature, try to find connections between the known and unknown. For technical writing, this common theme means that writers need to be aware of this dichotomy, not to reject it but to understand that it exerts a controlling influence over both the writing and the reading task by forcing all participants in the text to bring their own perceptions to bear and by selecting those elements which have efferent value for future use.

An additional aspect of personality that must be dealt with concerns what Rosenblatt calls "selective attention." In selective attention, Rosenblatt claims that a reader adopts a focus of attention, a stance, and then selects responses relevant to the text based on that stance. She adds that this continuing process bestows interest on particular thoughts which then seem independent of consciousness; at this point the selective process sets the degree of awareness by weighting the potentiality of the text for both efferent and experiential import.[5] The reader has the primary responsibility to manage this weighting process which, in actuality, is based on textual potential for engaging the reader in multiple, selective activities.[6]

Selective attention can also be seen in M.A.K. Halliday's terms as "semantic potential." In his view, language systems consist of a meaning potential (represented as a network of options) which are derived from a particular social function.[7] Language, which we viewed as primarily efferent in discussing Rosenblatt, can also be seen as a very small set of macro-functions--ideational, interpersonal, and textual. For our purposes, the most relevant macro-function is the ideational which has two subsets--experiential and logical. In the first instance--experiential--the writer tries to embody in language his own experience of the phenomena of the real world (including concepts and perceptions), while the latter--logical function--attempts to explain fundamental logical relationships such as coordination, opposition, modification, and the like. When readers encounter these functions, they should impress upon them a sense of prominence, which Halliday defines as departures from the expected, departures from the norm, or departures which establish a new norm. Any one of these prominences contains a sense of semantic potential to direct the reader's attention and, as a consequence, can create a closer approximation of the author's intention. The important aspect of such thinking and problems for our purposes is the recognition that there must, of necessity, be a strong personal element in efferential prose which allows a sense of individual valuation and identity on the part of the reader and the writer.[8]

Objectivity

"A word will mean exactly what I want it to mean" Alice in Wonderland

Objectivity is probably the single most persistent and pervasive element of the scientific method. Recall, however, that I differentiated objectivity from personality earlier in this paper. Objectivity, I said at that point, could be defined as the fair treatment of facts and phenomenon. Therefore, in my view, a writer can communicate personally and still be objective. I do want to mediate that suggestion with a brief examination of the nature of objectivity in reference to technical writing and the ethical implications of that relationship. I do not, however, want to rehearse the incredible volume of scholarship extant on the subject of objectivity; I want to concentrate on objectivity as it impinges on languages and the consequences of that encounter.

In a fashion similar to Rosenblatt's selective attention, R.S. Peters outlines a shift from knowledge acquisition as "passive colligations of associations" to an active process "of selecting, grouping, and reproducing." Objectivity, in his estimation, implies an active intelligence; the researcher can no longer hide behind the facade of neutral recorder.[9] As soon as a human being intervenes manually in an experimental environment as an observer in relation to apparatus--

both static and dynamic--and any measuring devices, objectivity ceases. Not only does the experimental environment affect observation, but specific localized cultural beliefs also influence objectivity. Gerald Holton, for instance, sees the context of discovery in terms of what Albert Einstein and others call a "personal struggle"; that is, the process of discovering problems develops out of 1.) the researchers' continuities and discontinuities and 2.) the relation of the work under consideration to personal lifestyles, cultural developments, and attitudes outside of the research area which exert some influence on its course. When one actually considers the nature of any research activity, it is evident that a highly individual process of selection occurs at every stage of the observing process.[10] One, then, finds very little evidence to support the supposed objective nature of research activities.

I think that we can take this statement as the basis for defining the problems found in so-called objective language as well as ethics in technology. Values are rejected because they cannot be observed in nature as "sense data" can. To say that values can be seen, can be identified, in the phenomenal world would be to admit the existence of a non-rational or illogical element within an otherwise rational activity. In a similar vein, it would be an admission of non-objective behavior to indicate that facts, data, or observations are sifted through or selected by the researcher/writer. However, that is precisely what occurs in any communication activity. As soon as the writer begins an "objective" report, certain writing, presentational, and formatting strategies are selected. When a particular charting or graphing technique is chosen, others are rejected. Establishing audience levels, cropping illustrations, and interpreting data all exemplify a small part of the range of "non-objective" writing behaviors. It seems to me that the closest one can get to objectivity in writing is to adopt the stance of fair treatment of data though I would not pretend to establish what "fair" means. Suffice it to say that we deal with a similar non-rational (not irrational) element in working with both ethics and writing strategies and, as such, neither one is readily analyzable. However, once researchers/writers become aware of the personal nature of both research and writing, it is much easier to admit ethical behaviors in their works.

Another approach to this problem of objectivity can be made through the works of those critics and philosophers generally associated with the phenomenology of language. Their works suggest, quite strongly, that objectivity has a clearly identifiable element of subjectivity to it. Maurice Merleau-Ponty, for example, maintains that writers in the course of their work depend on highly individual perceptions of the world as a minimal basis for any objective activity.[11] The same operation, he adds, is true for the process of analysis: we only get out of an object exactly what we put into it.[12] While Merleau-Ponty willingly admits the existence of objects and objectivities, he also stresses both the subjective and subjunctive nature of that objectivity. There is always an element of doubt or indeterminacy in any process that requires human choice.[13]

When humans try to understand a particular instance under a general law, they usually adopt an "idealizing fiction" that helps make sense of the task under consideration. That idealizing fiction owes much to human imagination.[14] Such a

sense of fiction bears out Edmund Husserl's observations about the character of objects: they are "things" as intended or meant by speakers and as taken by readers.[15] These intentional objects are those presented to thought and held before the mind as such, but it should be noted that this does not imply the actual, phenomenal existence of such intended objects. It only implies that a writer or a reader has transmitted in some manner a representation of an intentional object as he/she saw it.[16] As a consequence of this ability to transmit or depict an intentional object such objects take on two characteristics which have a very powerful and potent influence on the "objective" researcher/writer: identity of meaning and repeatability.[17] The objective researchers/writers view these two traits as an assurance of a correspondence between objective language and objects of their observation, and that others can recreate those experiences and observations from the language alone. Given the nature of language and individual responses to both language and observation, these possibilities are hardly likely. Regardless of the direction of critical inquiry into the neutral characteristics of observation and sensory experience, we are always left with the persistent doubt that such a state can be attained.

Linguistic Manipulation

"Broken symmetry in science as in everyday experience catches the eye and provokes the mind."
Horace Freeland Judson
The Search for Solutions

Jerry Mander in his book, Four Arguments for the Elimination of Television, recounts the story of the plight of the Indians in the Four Corners area of the Southwest. These people attempted to protect their land from industrial encroachment by exhorting viewers to keep the land in its pristine state. Their speeches were interlaced with anecdotal tales of the Indians' legendary symbiotic union with the land. In contrast, industry emphasized jobs, economic gains, and other tangible benefits. The Indians, of course, lost. The important point to consider in this confrontation is not the unethical nature of industry but the way in which industry employed language to create a specific public behavior--a favorable opinion for its project. I am not going to suggest that science, technology, industry, or business are immoral or unethical; instead, I want to explore ways in which language decisions, consciously or unconsciously, generate specific and sometimes unethical world-views.

While it is possible to demonstrate that science depends quite heavily on the creation of metaphors to posit in more accessible language the abstract phenomena present in scientific activities, technical writing, at virtually every audience level, generally resists such concentrated and persistent metaphorical language. However, technical communications do seem to rely, accidentally or not, on a variety of low-level, incidental metaphors that have a great deal of potential for controlling both the immediate constituents of the text they appear in and subsequent, supporting texts.

If one accepts the earlier remarks about intentional objects, then the potential for having objects in controlled and often misrepresented ways becomes apparent. When Husserl writes about "correlatives of experience," he means for us to see these as language or thought patterns which have an identifiable correspondence with the "reality" (whether objects or abstract ideas) under consideration. For him these correlatives come into being as part of an active process which at the same time perceives, imagines, and thinks about that "reality."[18] The implication of this situation is that researchers and writers can create alternative realities which have little, if any, basis in any identifiable "reality." This last observation would effectively obviate the "ideal" character of intentional objects. It would, instead, create a class of objects which, though intended, had no "reality" and no "sense-content" on which a reader could depend for meaning and/or ethical values.[19] An obvious example of this kind of language manipulation can be found in the use of neutral terms in military and industrial jargon. When one talks about "waste" in terms of "garbage," killing is no longer an issue. But the term "waste" grew out of a long list of similar words associated with killing that made such a term acceptable--"personnel devaluation," "body bags," etc. It is interesting, for our purposes, to note that the jargon grew out of the more formal language established for both administrative procedures and personnel training.

How does something like this occur in language? Quite simply it begins on the most formal level and moves toward jargon and cliche by a very subjective process. Merleau-Ponty points out that readers as well as language users sense gaps in language ("silences" in his terms) and attempt to fill them with their own words. Since the act of expression is never total (at least never satisfactory from someone's standpoint), the reader is required to account for the "silences" in language.[20] The end result of this element of indeterminacy is a sense, on the part of the reader, of a lack of correspondence between the elements of discourse and meaning. Language is thrown out of focus into what Merleau-Ponty calls a "coherent deformation."[21] But he sees coherent deformation as a valuable asset to language. It provokes interest, shocks the reader into thought, and paves the way for understanding. I think, however, one can read coherent deformation in a pejorative sense with some degree of justice with reference to low level metaphors. In my previous examples, the deformations of language do not have as their aim the purpose of illuminating or expanding a particular perceptual framework; on the contrary, their evident purpose is to contract and control such a frame of reference. They represent, in effect, what Polanyi calls "moral inversions."[22]

One other way in which language is subject to the kinds of manipulation we have been exploring is through M.A.K. Halliday's concept of "prominences." Halliday maintains that it is possible to linguistically highlight specific aspects of a text to draw attention to them. In a general sense, this highlighting functions like verbal clues which allow the reader to select the approach to the text that appears closest to the writer's intention. However, there is a two-part potential for unethical behaviors in using prominences. First, one could highlight texts to impart an incorrect perspective--create a kind of false trail. Second, one could suppress a point that should be dominant to hide experimental failure, faulty design, or other unethical behaviors. Obviously, simply understanding the characteristics and functions of prominences carries a great deal of social responsibility.

All of these methods for linguistic manipulation are, in themselves, tools for efficient and reasonable use of language. However, they all carry within them the potential for incredible abuse. Language can be both related to reality and unrelated; it can be deformed for good as well as bad purposes; one can point out specific linguistic patterns or suppress them. Unlike the previous categories of this discussion--personality and objectivity in language--linguistic manipulation requires a conscious effort to achieve unethical ends.

Implications and Conclusions

As writing teachers in a discipline specific area we need to be aware of the tremendous potential inherent in our course to affect changes in social behaviors. Since our primary audience is composed of technocrats, we have the unique opportunity to instill a sense of ethics in their language usage and, by extension, in the primary technological activity--the production of artifacts. We can achieve such results by concentrating on the linguistic, psychological, and philosophical implications of text creation; in particular, we can focus on the ethical issues inherent in such writing behaviors as personality, objectivity, and linguistic manipulation. Based on our knowledge of these areas it will be possible to offer writing instruction that gives the technological-minded student a valuable asset--communication skills--as well as a sense of values.

NOTES

[1]This paper was prepared in part during a National Endowment for the Humanities Summer Seminar (The Function of Discourse in Science and Literature, E. Fred Carlisle, Director, Michigan State University). Other versions of this work have been requested by several journals; the focus of those works is theoretical rather than pragmatic, as in this version.

[2]What I have in mind here is a definition of personality based somewhat on Polanyi's concept of personal:

> ...I think we may distinguish between the personal in us, which actively enters into our commitments, and our subjective states, in which we merely endure our feelings. This distinction establishes the conception of the personal, which is neither subjective nor objective. In so far as the personal submits to requirements acknowledged by itself as independent of itself, it is not subjective; but in so far as it is an action guided by individual passions, it is not objective either. It transcends the disjunction between subjective and objective.
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> (Personal Knowledge, p. 300)

[3]Herbert A. Simon, The Sciences of the Artificial (Cambridge, MS: MIT Press, 1969), p. 66.

[4]Louise M. Rosenblatt, The Reader The Text The Poem: The Transactional Theory of the Literary Work (Carbondale, IL: SIU Press, 1978), p. 24.

[5]Ibid., pp. 42-43.

[6]Ibid., p. 75.

[7]M.A.K. Halliday, "The Functional Basis of Language," in Explorations in Language (N.Y.: Elsevier, 1977), p. 29.

[8]I intend to use the terms efferential and technical prose interchangably in the remainder of this paper.

[9]Edward Walter, "Reasoning in Science and Ethics," Journal of Value Inquiry, 8 (Winter, 1976), 255.

[10]Gerald Holton, "Themata in Scientific Thought," in Scientific Imagination (Cambridge: CUP, 1978), p. 5; cf. Thematic Origins of Scientific Thought (Cambridge: HUP, 1973), p. 101.

[11]Maurice Merleau-Ponty, Signs (Evanston, IL: Northwestern Univ. Press, 1964), p. 55.

[12]Ibid., p. 77; cf. Michael Polanyi, Personal Knowledge (Chicago: Univ. of Chicago Press, 1958), pp. 105-106.

[13]James M. Edie, Speaking and Meaning (Bloomington, IN: Indiana Univ. Press, 1976), pp. 92-93.

[14]Ibid., p. 121.

[15]Ibid., p. 5; cf. Rosenblatt, pp. 75, 88.

[16]Ibid., pp. 14, 20.

[17]Ibid., p. 22.

[18]Ibid., p. 11.

[19]Ibid., p. 13.

[20]Merleau-Ponty, p. 90.

[21]Ibid., p. 44.

[22]Polanyi, p. 233.